



Policy & Procedure (P&P)

Policy Title :

Selection of Blood for Transfusion

Department	Index No.	Scope
Laboratory & Blood Bank	LAB-082	Blood Bank Staff
Issue Date	Revision NO	Effective Date
24/10/1432	3	23/07/1440
Review Due Date	Related Standard NO.	Page Number#
23/07/1442	CBAHI (LB .67)	6

01. Policy:

Red blood cells are transported under conditions that maintain blood and blood product viability and function as well as minimize bacterial proliferation.

02. Definition:

N/A

03. Purpose :

Whenever possible, patients should receive ABO-identical blood; however, it may be necessary to make alternative selections, e.g. in case of shortage of a certain blood group in the inventory, hemolytic disease of the new born, and patients with multiple antibodies requiring units of uncommon phenotypes.

04. Procedure :

Selection of components is summarized in the following table:

Blood or Blood product	ABO Requirements
Whole Blood	Must be identical to that of the recipient
Red Blood Cells	Must be compatible with the recipient's plasma
Fresh Frozen Plasma	Should be compatible with the recipient's red cells

Platelets	All ABO groups acceptable; components compatible with the recipient's red cells are preferred
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04.1. Whole Blood Products

When whole blood is requested, the patients should receive ABO-identical blood, if the patient is Rh positive he can receive Rh positive or Rh Negative ABO-identical blood, but if the patient is Rh negative he can receive Rh Negative ABO- identical blood only Because plasma-containing components can affect the recipient's red cells, the ABO antibodies in transfused plasma should be compatible with the recipient's red cells when feasible. Requirements for components and acceptable alternative choices are summarized as follows (see table).

Patient Blood group	Donors whole Blood	
	1 st choice	2 nd choice
A +	A +	A -
A -	A -	
B +	B +	B -
B -	B -	
AB +	AB +	AB -
AB -	AB -	
O +	O +	O -
O -	O -	

04.2. Packed Red Cells

When packed red cells are requested ABO compatible blood must be given i.e. donor's red cells must be ABO compatible with the recipient's plasma. (O)red blood cells lack the ABO antigens so it is considered universal | packed red blood cells donors.



Patient's Group	Donor's blood group Group (PRBCs)							
	1 st choice	2 nd choice	3 rd choice	4 th choice	5 th choice	6 th choice	7 th choice	8 th choice
A +	A+	A-	O+	O-				
A -	A-	O-						
B +	B+	B-	O+	O-				
B -	B-	O-						
O+	O+	O-						
O-	O-							
AB +	AB+	AB-	A+	B+	O+	A-	B-	AB-
AB -	AB-	A-	B-	O-				

The

following table should be followed when selecting PRBCs alternatives.

04.3. Fresh frozen plasma

Because plasma-containing components can affect the recipient's red cells, the ABO antibodies in transfused plasma should be compatible with the recipient's red cells when feasible. There is no antibodies in the (AB) plasma so it is considered universal donor in this aspect.

The Rh type of the FFP does not affect choice of plasma for transfusion (see table).

Patients' blood group	Donors Fresh Frozen plasma alternatives							
	1 st choice	2 nd choice	3 rd choice	4 th choice	5 th choice	6 th choice	7 th choice	8 th choice
A+	A+	A-	AB+	AB-				
A-	A-	AB-	A+	AB+				
B+	B+	B-	AB+	AB-				
B-	B-	AB-	B+	AB+				

AB+	AB+	AB-						
AB-	AB-	AB+						
O+	O+	O-	AB+	AB-	A+	A-	B+	B-
O-	O-	O+	AB-	AB+	A-	A+	B-	B-

*Group A is the second choice of blood because Anti-B in group A blood is likely to be weaker than Anti-A in group B blood.

04.4. Platelets

When selecting platelet concentrates for transfusion, the ABO plasma present in the unit should be ABO compatible with the patient's red cells. Rh negative patients especially females in child bearing period should receive Rh negative platelets whenever possible. Rh positive patients may receive Rh-positive or Rh-negative platelets.

Due to shortages in inventory regarding platelet concentrates, transfusion of platelets of an ABO or Rh type other than the patients is often necessary.

When Rh-positive platelets must be given to a Rh-negative individual, the administration of Rh-Immune globulin should be considered.

Note:

Platelet concentrate that contain > 2 mls of RBCs will be cross matched with the recipient's plasma.

Patients' blood group	Platelets donors' alternatives							
	1 st choice	2 nd choice	3 rd choice	4 th choice	5 th choice	6 th choice	7 th choice	8 th choice
A+	A+	A-	O+	O-	AB+	AB-	B+	B-
A-	A-	O-	AB-	B-	A+	O+	AB+	B+
B+	B+	B-	O+	O-	AB+	AB-	A+	A-
B-	B-	O-	AB-	A-	B+	O+	AB+	A+
O+	O+	O-	B+	B-	AB+	AB-	A+	A-



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O-	O-	B-	AB-	A-	O+	B+	AB+	A+
AB+	AB+	AB-	A+	A-	B+	B-	O+	O-
AB-	AB-	A-	B-	O-	AB+	A+	B+	O+

04.5. Cryoprecipitate:

Because CRYO contains ABO antibodies, consideration should be given to ABO compatibility when the infused volume will be large relative to the recipient's red cell mass.

04.6. Rh Type

Rh-positive blood components should routinely be selected for D+ recipients. Rh-negative units will be compatible but should be reserved for D- recipients. D-patients should receive red-cell-containing components that are Rh-negative to avoid immunization to the D antigen.

Occasionally, ABO-compatible Rh-negative components may not be available for D-recipients. In this situation, the blood bank physician and the patient's physician should weigh alternative courses of action. Depending on the childbearing potential of the patient and the volume of red cells transfused, it may be desirable to administer Rh Immune Globulin to a D-patient given Rh-positive blood.

Patient's Group	1 st Choice	2 nd Choice
Rh Positive	Rh Positive	Rh Negative
Rh Negative	Rh Negative	

04.7. QUALITY CONTROL:

04.7.1. Monthly QC for Red blood cells.

04.7.2. Monthly QC for platelet concentrate

06. RESPONSIBILITY

06.1. All Laboratory & Blood Bank Staff of Al-Qunfudah General Hospital.

07. EQUIPMENT AND FORMS::

N/A.

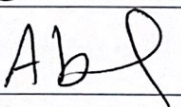
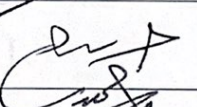
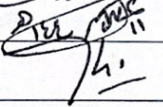
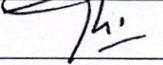
08. Attachment :

N/A

09. Reference

- 09.1. The Technical Manual of the American Association of Blood Banks.
09.2. The unified practical procedure manual for blood banks in the Arab countries.

Preparation , Reviewing & Approval Box

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